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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 10/646,685
Filing Date: August 25, 2003
Appellant(s): KELLY ET AL.

Phillip J. Hoffmann
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 1-30-08 appealing from the Office action

mailed 2-6-07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,728,603   PRUZAN ET AL   4-2004

6,865,460   BRAY ET AL   3-2005

20030014521   ELSON ET AL   1-2003

20040225740   KLEMBA ET AL   11-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 30 and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention. The claims include limitations that a first work

machine includes a first gateway and a first destination module and that when the first

gateway can process the first message, it performs functions similar to those of the first

destination module using data included in the first message. There is no support for the

first module being present and the first gateway intercepting the first message. The

specification consistently discloses the invention as replacing the modules and it never

discloses that the proxy logic and destination modules that the proxy logic represents

are present at the same time. This also applies to the second proxy logic and the

second destination module.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 8, 9, 10, 11, 12-25, 27-29, and 32-35 are rejected under 35 U.S.C.

103(a) as being unpatentable over Pruzan et al., 6728603, in view of Bray et al.,

6865460.

As per claims 1, 2, 3, 4, 8, 10, 11, 12, 13, 14, 15, 16, 19, 20, 21, 22, 23, 28, 29,

32, 33, 34, and 35, Pruzan et al. disclose detecting a first message sent by a source

module on a first data link, wherein the first message is directed to a destination module

and includes an address identifier corresponding to the destination module lines 36-34,

on column 3, lines 1-4, on column 7, lines 16-20, on column 8, and lines 24-27 on

column 1; retrieving the first message and extracting the destination address identifier

from the message on line 48, on column 6, through line 5, on column 7, and on line 52,

on column 7 through line 26, on column 8; routing, based on the destination address

and an address map including proxy logic identifiers, the first message to an element

that performs functions associated with the destination module on lines 54-55, on

column 7, and lines 10-23, on column 9; detecting a first message sent by a source

module on a proprietary data link on lines 42-43, on column 4; providing the first

message from the proxy logic element to a second module over a second data link

interfaced by the proxy logic element on lines 5-10, on column 7; receiving a second

message responsive to the first message from the second module via the second data

link and routing, using an address map, the second message to the first module over

the first data on lines 11-17, on column 14, these limitations are functional language that

Pruzan et al. is capable of performing; and that the gateway can perform the functions

of a node (module) on lines 10-15, on column 9; a source module for broadcasting a

first message over a first data link that uses a first protocol, wherein the first message is

intended for a destination module and includes a destination address identifier

associated with the destination module on line 36-40, on column 3, lines 1-4, on column

7, lines 16-20, on column 8, and lines 24-27, on column 1; a gateway coupled to the first

data link configures to monitor the first data link for messages on line 48, on column 6,

through line 5 on column 7, route the intercepted message based on information in an

address map on lines 54-55, on column 7, and lines 10-23, on column 9; detecting a

first message sent by a source module on a proprietary data link on lines 42-43, on

column 4; providing the first message or information responsive to the first message

from the proxy logic element to a second module over a second data link(32) interfaced

by the proxy logic element on lines 5-10, on column 7, and lines 8-26, on column 8;

receiving a second message responsive to the first message from the second module

via the second data link and routing, using an address map, the second message to the

first module over the first data on lines 11-17, on column 14, these limitations are

functional language that Pruzan et al. is capable of performing. The address map is

inherent in Pruzan et al. because they disclose the that protocol converter examines

any messages it receives to determine what address it is directed towards and then

transmits the message to the appropriate bus or to the wireless device. Since the

protocol converter analyzes the message and then directs the message to the correct

place it must be relying on an address map. There must be some stored information in

the protocol converter that keeps track of addresses associated with the different

busses and the wireless device.

Pruzan does not disclose that the element that performs functions associated

with the destination module is a proxy logic element; intercepting the first message from

the first data link based on a determination that the destination address corresponds to

proxy logic included in the gateway and routing the message to the proxy logic that

performs functions associated with the destination module based on data included in

the intercepted module on lines 23-28, on column 4.

Bray et al. teach the element that performs functions associated with the

destination module is a proxy logic element, intercepting the first message from the first

data link based on a determination that the destination address corresponds to proxy

logic included in the gateway and routing the message to the proxy logic that performs

functions associated with the destination module based on data included in the

intercepted module on lines 23-28, on column 4.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to use the software objects of Bray et al. in the invention of Pruzan

et al. because such modification allows simpler hardware that is easily upgradeable as

stated on lines 58, on column 8, through line 15, on column 9, of Bray et al.

As per claims 5, 6, Pruzan et al. disclose detecting that the first data link is

incompatible with the second data link and translating the second message into a

comparable message consistent with the first data link on lines 39-43, on column 6;

generating, by the proxy logic element, a second message that is responsive to the first

message and routing the second message to the source module via the first data link on

lines 15-20, on column 1, this limitation is functional language that Pruzan is capable of

performing.

As per claim 9, Pruzan et al. disclose the source nodes include at least one of

either an on-board module and an off-board module (item 22).

As per claim 18, 25, Pruzan et al. disclose translating the second message into a

comparable message consistent with the first data link on lines 39-43 and 48-60, on

column 6.

As per claim 17, 24 Pruzan et al. disclose the second data link is a non-propriety

standard data link including one of J1930, CAN, MODBUS, serial standard data link,

and Ethernet on lines on lines 42-43, on column 4. The second link can also be viewed

as one of the other protocols on bus 24 of Pruzan et al.

As per claims 27, Pruzan et al. discloses the limitations above; a master

controller remotely located with respect to the work machine and couple to the work

machine via a wireless data link (40); the gateway routes the intercepted message,

based on information in an address map, to proxy logic located in the gateway that

performs function associated with the master controller on lines 8-26, on column 8, and

lines 22-30, on column 9.

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pruzan

et al., 6728603, in view of Bray et al., 6865460 as applied to claims 1-6, 8, 9, 10, 11, 12-

25, 27-29, and 32-35 above, and further in view of Elson et al., 2003/0014521.

Pruzan et al. and Bray et al. disclose the limitations as set forth above. They do

not disclose retrieving by the gateway a proxy logic element from a remote location.

Elson et al. teach retrieving by the gateway a proxy logic element from a remote

location in paragraph 96. It would have been obvious to one of ordinary skill in the art at

the time the invention was made to use the retrieving of Elson et al. in the invention of

Pruzan et al. and Bray et al. because such modification would enable the gateway to

respond to evolving customer requirements as stated in paragraph 31 of Elson et al.

Claims 30, 31, 36 and 37 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Pruzan et al., 6728603, in view of Klemba et al.,

US2004/0225740A1.

Pruzan et al. disclose the limitations as set forth above. They do not disclose

routing the message from a first gateway in a first machine to a second gateway in a

second machine when the first gateway is unable to process the message; the second

gateway routing the message from the second gateway when the second gateway is

unable to process the message. Klemba et al. teaches routing the message from a first

gateway in a first machine to a second gateway in a second machine when the first

gateway is unable to process the message and the second gateway routing the

message from the second gateway when the second gateway is unable to process the

message in paragraph 73. Klemba et al. teaches an adhoc network between vehicles

that rely on routing table. If the message isn't addressed to a service point (first

gateway) it gets passed along to other service points (second gateway) since the

message can't be processed unless it is at the correct service point. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to use the

network of Klemba et al. with the invention of Pruzan et al. because such modification

would expand the range of the network as disclosed by Klemba et al.

(10) Response to Argument

Claims 30 and 31

The first grounds of rejection are claims 30 and 31, rejected under 35 USC 112,

first paragraph. Appellant's argument are not convincing because they fail to provide a

showing of the first module being present when the first gateway intercepts the first

message. The entire specification repeatedly states that the gateway is a replacement

for a module, not something provided for to provide some other function such as

redundancy. There are many places in the specification to support this. First the

technical background in paragraph 6 speaks of multiple physical devices frustrating

performance and being costly and time consuming. In paragraph 42, the idea of a virtual

control module is repeatedly stated and states "a single gateway may therefor **replace** a

plurality of distinct control modules in a given work machine." Paragraph 44, the second

to last sentence, states "one or more **replaced** control modules." In paragraph 46, the

first sentence refers to replaced modules. In short, there is nothing in the originally filed

specification to suggest that the module that is represented by the proxy logic still

remains in the vehicle.

Claims 1-6, 8-25, 27-29, and 32-35

Appellant's argument contends that the references fails to disclose "routing, based on the destination address and an address map including proxy logic identifiers, the first message to a proxy logic element in the gateway that performs functions associated with the destination module based on data included in the first message." Pruzan discloses a protocol converter that controls communication over between several networked devices that can be on one bus or several busses. On lines 5-39, on column 4, Pruzan discusses how the protocol converted controls which messages get sent where. This includes looking at the origination of the message, the destination address of the message, the contents of the message, etc. All of these criteria can be interpreted as an address map, especially, the destination address. This is further disclosed in lines 1-10, and lines 57-67, on column 7, and lines 8-28, on column 8. Pruzan also discloses that computer 70, may be operable to emulate the functions of a node on bus 24 (see lines 10-23, on column 9). A node on the bus would correspond to one of the devices like the engine controller, brake controller, etc. This emulation corresponds to the proxy logic of the current invention. The computer 70 has taken over the functions one of the vehicle controllers. Pruzan also discloses in this section that the computer 70 also can claim the addresses on the bus associated with the nodes and implement the filtering requirements. This would include now intercepting any messages that were once meant for the node that is being emulated so that the computer (70) can provide the node functions as disclosed in Pruzan. Considering all of the above it is clear that Pruzan does disclose "routing, based on the destination

address and an address map including proxy logic identifiers, the first message to a

proxy logic element in the gateway that performs functions associated with the

destination module based on data included in the first message" since we know that

Pruzan's computer (70) seized bus addresses and performs that functions that were

once done by a node (destination module). The address of the node has now become

a proxy logic identifier by virtue of the node being emulated by the computer (70). Any

message sent to the node will now be directed to the computer (70) or, in the

terminology of the current invention, proxy logic.

Since Pruzan only disclose the nodes as being "emulated", to remove any doubt

a secondary reference was cited to show that emulation via proxy logic is known in the

art. Bray et al. teaches interface modules 28 (IM) that can either be virtual devices or

actual physical devices (see lines 23-28, on column 4). Bray also discloses that the

control processor (14) routes the data between the IMs. Bray also describes many

advantages (motivation) of using such a system on lines 1-15, on column 9.

Claims 32 and 34

Appellants argument again center on how messages are routed between proxy

logic. As Pruzan discloses, the computer (70) is able to emulate any node on the bus

and take over the functions of the node. This would include handling the

communications of the node. Pruzan is capable of emulating more than one node at a

time. If this is the case, then the computer (70) will answer all the bus traffic for the

node that is being emulated and perform whatever function the node would normally

perform. So if the computer (70) is now emulating the engine and transmission

controller, any messages that were before being routed to the physical nodes of the

transmission controller and the engine controller would instead be intercepted and acted

upon by the computer (70). Otherwise, the vehicle would fail to function correctly. We

already know from Pruzan et al. that these controllers are constantly exchanging

messages (see lines 21-23, on column 1). Now the emulated nodes would be

exchanging information. Bray also discloses the IMs exchanging messages with each

other through the control processor (14) in much the same way.

Claims 30 and 36

The argument with respect to claims 30 and 36 comes down to what definition to

give to "unable to process the message". Appellant fails to recognize that using the

broadest reasonable interpretation of the claim language the routing of Klemba does

read on the current invention. In Klemba, if a message is not addressed to a current

machine, the message is passed on. This can be interpreted as being unable to

process the message. In other words, if the message isn't meant for the machine, the

machine is unable to process it so the machine passes the message along. Using this

interpretation the cited art reads on the claims.

Claim 38

The arguments for this claim rely on previous arguments and should be upheld

for the same reasons.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the

Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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